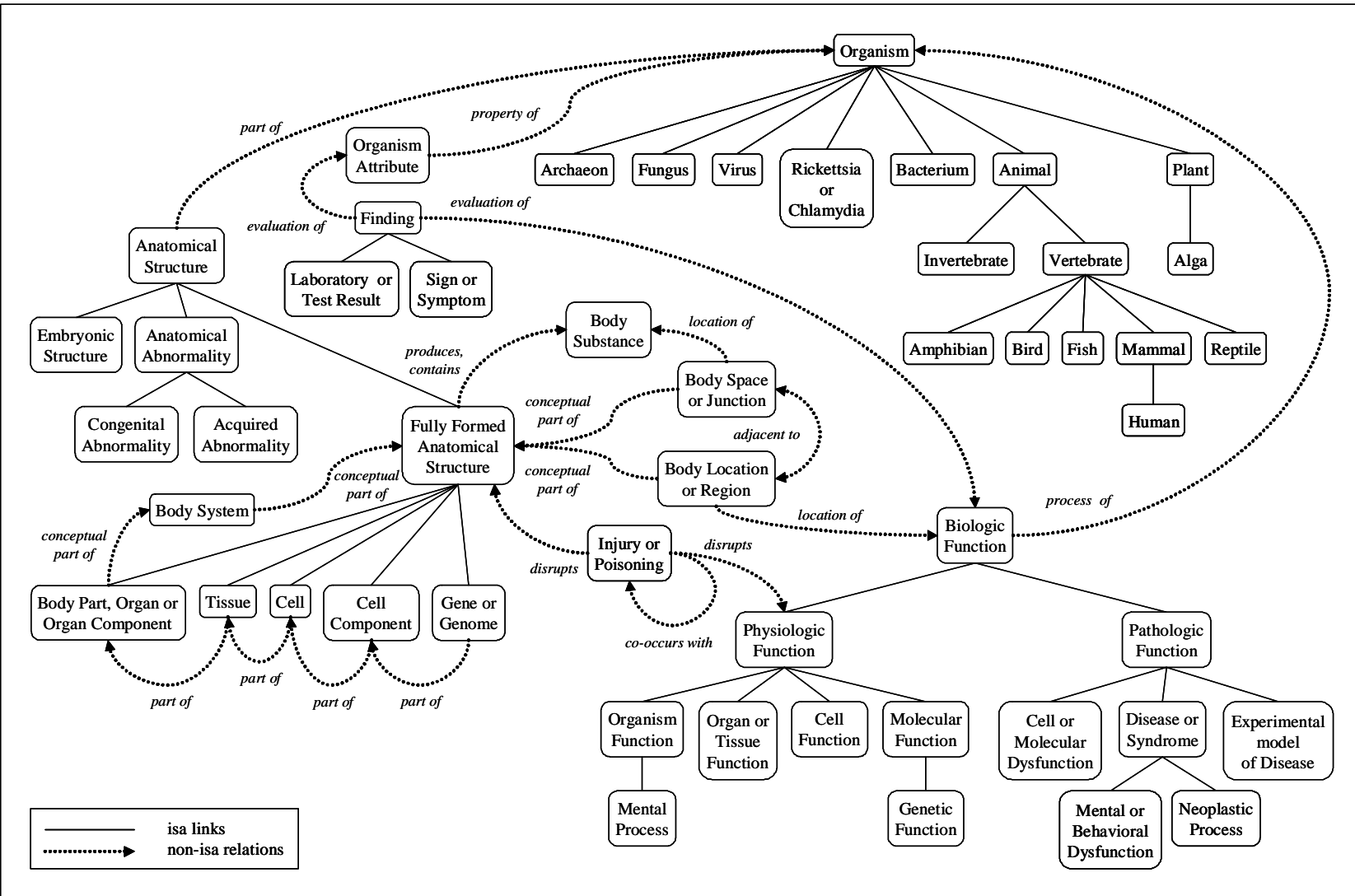


UMLS Semantic Network (partial representation)



Semantic types trees (with semantic groups)

EntityOBJC	[Entity] (continued)
■ Physical Object.....OBJC	■ Conceptual Entity.....CONC
■ Organism.....LIVB	■ Idea or Concept.....CONC
■ Plant.....LIVB	■ Temporal Concept.....CONC
■ Alga.....LIVB	■ Qualitative Concept.....CONC
■ Fungus.....LIVB	■ Quantitative Concept.....CONC
■ Virus.....LIVB	■ Functional Concept.....CONC
■ Rickettsia or Chlamydia.....LIVB	■ Body System.....ANAT
■ Bacterium.....LIVB	■ Spatial Concept.....CONC
■ Archaeon.....LIVB	■ Body Space or Junction.....ANAT
■ Animal.....LIVB	■ Body Location or Region.....ANAT
■ Invertebrate.....LIVB	■ Molecular Sequence.....GENE
■ Vertebrate.....LIVB	■ Nucleotide Sequence.....GENE
■ Amphibian.....LIVB	■ Amino Acid Sequence.....GENE
■ Bird.....LIVB	■ Carbohydrate Sequence.....GENE
■ Fish.....LIVB	■ Geographic Area.....GEOG
■ Reptile.....LIVB	■ Finding.....DISO
■ Mammal.....LIVB	■ Laboratory or Test Result.....PHEN
■ Human.....LIVB	■ Sign or Symptom.....DISO
■ Anatomical Structure.....ANAT	■ Organism Attribute.....PHYS
■ Embryonic Structure.....ANAT	■ Clinical Attribute.....PHYS
■ Anatomical Abnormality.....DISO	■ Intellectual Product.....CONC
■ Congenital Abnormality.....DISO	■ Classification.....CONC
■ Acquired Abnormality.....DISO	■ Regulation or Law.....CONC
■ Fully Formed Anatomical Structure.....ANAT	■ Language.....CONC
■ Body Part, Organ, or Organ Component.....ANAT	■ Occupation or Discipline.....OCCU
■ Tissue.....ANAT	■ Biomedical Occupation or Discipline.....OCCU
■ Cell.....ANAT	■ Organization.....ORGA
■ Cell Component.....ANAT	■ Health Care Related Organization.....ORGA
■ Gene or Genome.....GENE	■ Professional Society.....ORGA
■ Manufactured Object.....OBJC	■ Self-help or Relief Organization.....ORGA
■ Medical Device.....DEVI	■ Group Attribute.....CONC
■ Drug Delivery Device.....DEVI	■ Group.....LIVB
■ Research Device.....DEVI	■ Professional or Occupational Group.....LIVB
■ Clinical Drug.....CHEM	■ Population Group.....LIVB
■ Substance.....OBJC	■ Family Group.....LIVB
■ Chemical.....CHEM	■ Age Group.....LIVB
■ Chemical Viewed Functionally.....CHEM	■ Patient or Disabled Group.....LIVB
■ Pharmacologic Substance.....CHEM	EventACTI
■ Antibiotic.....CHEM	■ Activity.....ACTI
■ Biomedical or Dental Material.....CHEM	■ Behavior.....ACTI
■ Biologically Active Substance.....CHEM	■ Social Behavior.....ACTI
■ Neuroreactive Substance or Biogenic Amine.....CHEM	■ Individual Behavior.....ACTI
■ Hormone.....CHEM	■ Daily or Recreational Activity.....ACTI
■ Enzyme.....CHEM	■ Occupational Activity.....ACTI
■ Vitamin.....CHEM	■ Health Care Activity.....PROC
■ Immunologic Factor.....CHEM	■ Laboratory Procedure.....PROC
■ Receptor.....CHEM	■ Diagnostic Procedure.....PROC
■ Indicator, Reagent, or Diagnostic Aid.....CHEM	■ Therapeutic or Preventive Procedure.....PROC
■ Hazardous or Poisonous Substance.....CHEM	■ Research Activity.....PROC
■ Chemical Viewed Structurally.....CHEM	■ Molecular Biology Research Technique.....PROC
■ Organic Chemical.....CHEM	■ Governmental or Regulatory Activity.....ACTI
■ Nucleic Acid, Nucleoside, or Nucleotide.....CHEM	■ Educational Activity.....PROC
■ Organophosphorus Compound.....CHEM	■ Machine Activity.....ACTI
■ Amino Acid, Peptide, or Protein.....CHEM	■ Phenomenon or Process.....PHEN
■ Carbohydrate.....CHEM	■ Human-caused Phenomenon or Process.....PHEN
■ Lipid.....CHEM	■ Environmental Effect of Humans.....PHEN
■ Steroid.....CHEM	■ Natural Phenomenon or Process.....PHEN
■ Eicosanoid.....CHEM	■ Biologic Function.....PHEN
■ Inorganic Chemical.....CHEM	■ Physiologic Function.....PHYS
■ Element, Ion, or Isotope.....CHEM	■ Organism Function.....PHYS
■ Body Substance.....ANAT	■ Mental Process.....PHYS
■ Food.....OBJC	■ Organ or Tissue Function.....PHYS
	■ Cell Function.....PHYS
	■ Molecular Function.....PHYS
	■ Genetic Function.....PHYS
	■ Pathologic Function.....DISO
	■ Disease or Syndrome.....DISO
	■ Mental or Behavioral Dysfunction.....DISO
	■ Neoplastic Process.....DISO
	■ Cell or Molecular Dysfunction.....DISO
	■ Experimental Model of Disease.....DISO
	■ Injury or Poisoning.....DISO

Semantic relationships

isa associated_with ■ <i>functionally_related_to</i> ■ ■ affects ■ ■ ■ manages ■ ■ ■ treats ■ ■ ■ disrupts ■ ■ ■ complicates ■ ■ ■ interacts_with ■ ■ ■ prevents ■ ■ brings_about ■ ■ ■ produces ■ ■ ■ causes ■ ■ performs ■ ■ ■ carries_out ■ ■ ■ exhibits ■ ■ ■ practices ■ ■ occurs_in ■ ■ ■ process_of ■ ■ uses ■ ■ manifestation_of ■ ■ indicates ■ ■ result_of ■ <i>temporally_related_to</i> ■ ■ co-occurs_with ■ ■ precedes	[associated_with] (continued) ■ <i>physically_related_to</i> ■ ■ part_of ■ ■ consists_of ■ ■ contains ■ ■ connected_to ■ ■ interconnects ■ ■ branch_of ■ ■ tributary_of ■ ■ ingredient_of ■ <i>spatially_related_to</i> ■ ■ location_of ■ ■ adjacent_to ■ ■ surrounds ■ ■ traverses ■ <i>conceptually_related_to</i> ■ ■ evaluation_of ■ ■ degree_of ■ ■ analyzes ■ ■ ■ assesses_effect_of ■ ■ measurement_of ■ ■ measures ■ ■ diagnoses ■ ■ property_of ■ ■ derivative_of ■ ■ developmental_form_of ■ ■ method_of ■ ■ conceptual_part_of ■ ■ issue_in
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Semantic Groups with Semantic Type members

Semantic Groups		Semantic Types	
Activities & Behaviors	ACTI	9	<ul style="list-style-type: none"> ■ Activity ■ Behavior ■ Daily or Recreational Activity ■ Event ■ Governmental or Regulatory Activity ■ Individual Behavior ■ Machine Activity ■ Occupational Activity ■ Social Behavior
Anatomy	ANAT	11	<ul style="list-style-type: none"> ■ Anatomical Structure ■ Body Location or Region ■ Body Part, Organ, or Organ Component ■ Body Space or Junction ■ Body Substance ■ Body System ■ Cell ■ Cell Component ■ Embryonic Structure ■ Fully Formed Anatomical Structure ■ Tissue
Chemicals & Drugs	CHEM	26	<ul style="list-style-type: none"> ■ Amino Acid, Peptide, or Protein ■ Antibiotic ■ Biologically Active Substance ■ Biomedical or Dental Material ■ Carbohydrate ■ Chemical ■ Chemical Viewed Functionally ■ Chemical Viewed Structurally ■ Clinical Drug ■ Eicosanoid ■ Element, Ion, or Isotope ■ Enzyme ■ Hazardous or Poisonous Substance ■ Hormone ■ Immunologic Factor ■ Indicator, Reagent, or Diagnostic Aid ■ Inorganic Chemical ■ Lipid ■ Neuroreactive Substance or Biogenic Amine ■ Nucleic Acid, Nucleoside, or Nucleotide ■ Organic Chemical ■ Organophosphorus Compound ■ Pharmacologic Substance ■ Receptor ■ Steroid ■ Vitamin
Concepts & Ideas	CONC	12	<ul style="list-style-type: none"> ■ Classification ■ Conceptual Entity ■ Functional Concept ■ Group Attribute ■ Idea or Concept ■ Intellectual Product ■ Language ■ Qualitative Concept ■ Quantitative Concept ■ Regulation or Law ■ Spatial Concept ■ Temporal Concept
Devices	DEVI	2	<ul style="list-style-type: none"> ■ Medical Device ■ Research Device
Disorders	DISO	12	<ul style="list-style-type: none"> ■ Acquired Abnormality ■ Anatomical Abnormality ■ Cell or Molecular Dysfunction ■ Congenital Abnormality ■ Disease or Syndrome ■ Experimental Model of Disease ■ Finding ■ Injury or Poisoning ■ Mental or Behavioral Dysfunction ■ Neoplastic Process ■ Pathologic Function ■ Sign or Symptom
Genes & Molecular Sequences	GENE	5	<ul style="list-style-type: none"> ■ Amino Acid Sequence ■ Carbohydrate Sequence ■ Gene or Genome ■ Molecular Sequence ■ Nucleotide Sequence
Geographic Areas	GEOG	1	<ul style="list-style-type: none"> ■ Geographic Area
Living Beings	LIVB	23	<ul style="list-style-type: none"> ■ Age Group ■ Alga ■ Amphibian ■ Animal ■ Archaeon ■ Bacterium ■ Bird ■ Family Group ■ Fish ■ Fungus ■ Group ■ Human ■ Invertebrate ■ Mammal ■ Organism ■ Patient or Disabled Group ■ Plant ■ Population Group ■ Professional or Occupational Group ■ Reptile ■ Rickettsia or Chlamydia ■ Vertebrate ■ Virus
Objects	OBJC	5	<ul style="list-style-type: none"> ■ Entity ■ Food ■ Manufactured Object ■ Physical Object ■ Substance
Occupations	OCCU	2	<ul style="list-style-type: none"> ■ Biomedical Occupation or Discipline ■ Occupation or Discipline
Organizations	ORGA	4	<ul style="list-style-type: none"> ■ Health Care Related Organization ■ Organization ■ Professional Society ■ Self-help or Relief Organization
Phenomena	PHEN	6	<ul style="list-style-type: none"> ■ Biologic Function ■ Environmental Effect of Humans ■ Human-caused Phenomenon or Process ■ Laboratory or Test Result ■ Natural Phenomenon or Process ■ Phenomenon or Process
Physiology	PHYS	9	<ul style="list-style-type: none"> ■ Cell Function ■ Clinical Attribute ■ Genetic Function ■ Mental Process ■ Molecular Function ■ Organ or Tissue Function ■ Organism Attribute ■ Organism Function ■ Physiologic Function
Procedures	PROC	7	<ul style="list-style-type: none"> ■ Diagnostic Procedure ■ Educational Activity ■ Health Care Activity ■ Laboratory Procedure ■ Molecular Biology Research Technique ■ Research Activity ■ Therapeutic or Preventive Procedure